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ABSTRACT

Hypotheses that student personality, teacher needs, and instructional modes are related were tested and supported. Five elementary schools, 60 teachers, and 150 fourth-grade students participated in this study. Three instruments, Organizational Climate Description Questionnaire, Edwards Personal Preference Schedule, and the Children's Personality Questionnaire, were used to assess instructional mode, teacher needs, and student personality. Multiple discriminant techniques were used to analyze the data. The magnitude of the relationships supported the hypotheses tested and gave rise to the hypothesis that instructional mode influences student personalities through the interaction of the mode and teacher needs. (Author)

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AN INVESTIGATION OF RELATIONSHIPS AMONG INSTRUCTIONAL MODE, TEACHER NEEDS, AND STUDENTS' PERSONALITIES

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AN INVESTIGATION OF RELATIONSHIPS AMONG INSTRUCTIONAL MODE, TEACHER NEEDS, AND STUDENTS' PERSONALITIES.

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Objectives

From the introduction of non-gradedness in the United States by Goodlad and Anderson to such popular reports as Crisis in the Classroom, the hypothesis that Open Concept instruction would increase the quality of education has been entertained. Early studies operationally defined increased educational quality as higher scores on standard achievement tests and mixed results followed. The objective of the present study was to investigate the hypothesis that the personality development of the child, not his achievement level, may be related to instructional mode. A second hypothesis investigated the relationship of teacher needs and instructional mode.

Pilot research and discussions with teachers operating in an open concept mode had indicated that search along such dimensions as self concept, independence, and social relationships might well show the impact of this instructional strategy. It was indicated by these teachers that the achievement variable, when viewed in isolation, might be insensitive to their teaching.

Methods

Three variables were assessed: (1) the dominant instructional mode of the schools under investigation. This, on a continuum from traditional to open concept-teaching was assessed by reviewing curriculum guides and substantiated by scores on the Organizational Climate Description Questionnaire. (OCDQ) (2) The needs of the teachers, as shown by the scores on the Edwards Personal Preference Schedule (EPPS), and (3) the personalities of the students as measured by the Childrens Personality Questionnaire (CPQ).

Data Source

Five elementary schools, sixty teachers and one hundred-fifty fourth grade children participated in this study. The teachers and students came from three ethnic cultures: Black, Mexican-American, and Anglo. A wide range of socio-economic levels were represented and all five schools were integrated. Only students having had a minimum of one year in each of the instructional modes were included.

Results

Multiple discriminant and step-wise multiple discriminant techniques were used in the analysis of the data. A generalized D^2 statistic was used in the tests of the hypotheses.

The results supported both hypotheses indicating that there were relationships between instructional mode and both teacher needs and students' personalities. The hypothesized variables did contribute to the relationships. The magnitude of the relationships has led to a third hypothesis: that instructional mode does influence the personality development of the student but that this influence is processed through the interaction of mode and teacher needs. Although this is not a revolutionary hypothesis, it may lead to the further development of a theory of instruction within the affective domain. Further investigation of this nature may lead to the consideration of multiple domains as dependent variables spaces to be assessed in future instructional research.

INTRODUCTION

A previous study (Carbonari, 1970) of the Matzke school and its open concept teaching had indicated that time spent in its environment did seem to be related to the scores made on a personality assessment instrument. It found that children who had been in the Matzke school for over one year did exhibit significantly different scores on certain dimensions of the Children's Personality Questionnaire. This finding was one of the first of its kind in that most studies done on open concept teaching had concerned themselves with cognitive gains as measured by the standard achievement tests. These studies, in general, had been unable to find any achievement differences attributable to the school environment. One of the reasons given for these results was that the achievement test was measuring amount retained and that this may not have been a valid indicator of the effect of Open Concept instruction. It was therefore the purpose of the first study to investigate other domains of child development. The conclusion of that study indicated that this type of study ought to be expanded to include all of the schools in the district in order to cross-validate these original findings. If differences were found between schools as well as within a school, and if these differences could be related to the environment of the school further support would be gained for the hypothesis

that schools can affect the student in different ways depending on the conceptual model used within that school.

The Cypress Fairbanks School District agreed to the extension of the research and in the year that followed the present research was conducted. The primary goal of this study was to describe the schools within the district on three dimensions: (1) the climate or personality of each school as perceived by its teachers; (2) the needs or personalities of the teachers in each school; and (3) the personalities of the children in each school. Related questions that were investigated dealt with the relative position of each school compared to the others on each of these dimensions and whether or not any of the differences that might be found could be considered statistically and psychologically significant.

Significant differences aside, the information gained in this study along with the other data normally collected by the school district should provide a relatively complete picture of the district and how it relates to the needs and the wishes of the community it serves. It is now understood that a child's education is a complex function. To the extent that the significant dimensions of this function are known and assessed, valid and relevant decisions concerning it will be facilitated.

SELECTION OF VARIABLES TO BE ASSESSED

Three dimensions of the total education process were chosen to be assessed in this study. One dimension related to the climate of the school setting. Halpin and Croft, in their work on organizational climate, have developed a theory which divides these climates into six identifiable types. These can be arrayed on a continuum defined at one pole as an Open climate and at the other as a Closed climate. Closest to the Open climate would be the Autonomous climate. This would be followed by the Controlled climate, then the Familiar climate and closest to the Closed pole would be the Paternal climate. An instrument named The Organizational Climate Description Questionnaire (OCDQ) was developed by Halpin and Croft in order to measure the climate of any school. This instrument provides scores for the school being measured on eight dimensions: disengagement, hindrance, esprit, intimacy, aloofness, production emphasis, thrust, and consideration. The first four of these, disengagement, hindrance, esprit, and intimacy, refer to teacher behavior within the structure. The second four, aloofness, production emphasis, thrust, and consideration, refer to the principals' behavior within the school. Below are short paragraphs taken from the Halpin book, Theory and Research in Administration, describing each of these eight dimensions.

Teachers' Behavior:

1. Disengagement refers to the teachers' tendency to be "not with it." This dimension describes a group which is "going through the motions," a group that is "not in gear" with respect to the task at hand. It corresponds to the more general concept of 'anomie' as first described by Durkheim. In short, this subtest focuses upon the teachers' behavior in a task-oriented situation.

2. Hindrance refers to the teachers' feeling that the principal burdens them with routine duties, committee demands, and other requirements which the teachers construe as unnecessary "busy-work." The teachers perceive that the principal is hindering rather than facilitating their work.

3. Esprit refers to morale. The teachers feel that their social needs are being satisfied, and that they are, at the same time, enjoying a sense of accomplishment in their job.

4. Intimacy refers to the teachers' enjoyment of friendly social relations with each other. This dimension describes a social-needs satisfaction which is not necessarily associated with task-accomplishment.

Principal's Behavior:

5. Aloofness refers to behavior by the principal which is characterized as formal and impersonal. He "goes by the book" and prefers to be guided by rules and policies rather than to deal with the teachers in an informal face-to-face situation. His behavior, in brief, is universalistic rather than particularistic; nomothetic rather than idiosyncratic. To maintain this style, he keeps himself - at least, "emotionally" - at a distance from his staff.

6. Production Emphasis refers to behavior by the principal which is characterized by close supervision of the staff. He is highly directive and plays the role of a "straw boss." His communication tends to go in only one direction, and he is not sensitive to feedback from the staff.

7. Thrust refers to behavior by the principal which is characterized by his evident effort in trying to "move the organization." Thrust behavior is marked not by close supervision, but by the principal's attempt to motivate the teachers through the example which he personally sets. Apparently, because he does not ask the teachers to give of themselves anymore than he willingly gives of himself, his behavior, though starkly task-oriented, is nonetheless viewed favorably by the teachers.

8. Consideration refers to behavior by the principal which is characterized by an inclination to treat the teachers "humanly," to try to do a little something extra for them in human terms.

The second dimension or realm chosen to be assessed was concerned with the personalities of the teachers within the district. Previous experience with standardized instruments in this area indicated that the Edwards Personal Preference Schedule would be the one that best suited the needs of this study. It is a widely known and used instrument of proven reliability and validity. This test purports to measure the needs of a person. These needs measured are sixteen of those theoretically developed by H. A. Murray in his work on Manifest Needs. Those measured are, a need for:

Achievement (ach)	Succorance (suc)	Aggression (agg)
Deference (def)	Dominance (dom)	
Order (ord)	Abasement (aba)	
Exhibition (exh)	Nurturance (nur)	
Autonomy (aut)	Change (chg)	
Affiliation (aff)	Endurance (end)	
Intraception (int)	Heterosexuality (het)	

Work on the previous study indicated that this instrument was sensitive to the differences that might be expected in this research. The instrumentation in the Affective or

personal domain has not been developed to the degree that instrumentation in the Cognitive or achievement domain has. Therefore the selection of instruments is quite limited. It was felt that this measure (EPPS) did a good job at assessing the needs of the teachers and that fulfillment of these needs is one of the essential aspects of any working environment. To the extent that the teachers needs were found to be normal and to the extent that their jobs filled these needs, one could reasonably expect to find a healthy school environment for the children of this district.

The third dimension chosen to be investigated in this study was that of the personality development of the children in these five schools. Again, the previous study was used to guide in the selection of the instrument to be used in assessing this personality development. The IPAT Children's Personality Questionnaire (CPQ) had been found to be a much more sensitive instrument than the California Test of Personality, which was also used in the earlier study. One of the problems, as far as simplicity is concerned, is that the CPQ did not allow for the combining of scores into a general personality adjustment score. In theoretical fact, however, this is one of the strengths of the instrument in that it has identified fourteen relatively independent factors or dimensions of personality adjustment. It also lists as one of its purposes, the measure of personality development in the classroom. Each factor measured is identified in bi-polar terms. Therefore

a low score does not indicate a lack of some attribute but the degree of proximity to either pole. This in effect gives us measures on twenty eight attributes, the two poles of each of the fourteen factors. This portion of the measure is ipsative in nature, thus one cannot score high on both ends of a factor, and the scores must be treated as fourteen independent scores. The fourteen factors measured as indicated by their polar terms are:

Factor A	Reserved/Stiff	vs.	Easy Going
Factor B	Less Intelligent	vs.	More Intelligent
Factor C	Emotionally Unstable	vs.	Emotionally Stable
Factor D	Phlegmatic	vs.	Excitable
Factor E	Submissive	vs.	Dominant
Factor F	Serious	vs.	Happy-go-lucky
Factor G	Frivolous	vs.	Persevering
Factor H	Shy	vs.	Venturesome
Factor I	ToughMinded	vs.	Tender Minded
Factor J	Vigorous	vs.	Internally Restrained
Factor N	Simple	vs.	Shrewd
Factor O	Complacent	vs.	Self Reproaching
Factor Q_3	Lax	vs.	Self Controlled
Factor Q_4	Composed, Relaxed	vs.	Driven, Tense

SELECTION OF THE SAMPLE

At this point in the study, two decisions were made in regard to the sample selection. First, in order to insure that the Matzke sample did not have the benefit, or hindrance, of performing on the same instrument twice it was decided that the data that had been collected on them the previous year be used. This then led to the second decision that comparable samples were to be drawn from the other four schools in the district. A total of ninety subjects were chosen in each of the schools from a population of third,

fourth and fifth graders that had been in their respective schools at least one year. The one year proviso was used to insure that they had been in their school environment long enough to have been affected by it. This matched the present sample to the Matzke school sample. The third, fourth, and fifth grades were used because the instrument required reading ability. Because of the restrictions of some of the statistical techniques used, not all of the sample was used in each analysis. When sub-samples were chosen, strict randomization techniques were used as was also done with the drawing of the large sample. All the teachers in the district were asked to respond to the other two instruments and they, therefore constituted a population for that analysis. They were, however treated as a sample when tests of significance were made. All the examining was done by either this researcher or his graduate students who were majoring in measurement and evaluation. It was felt that a fair and valid set of measures were taken for this study. The cooperation of the District, the Teachers, and the children was excellent, which in itself tells something about the nature of the climate of this district.

STATISTICAL ANALYSIS

The Organizational Climate Description Questionnaire was scored according to the factor structure developed by Halpin and Croft and profiles were built for each of the

schools. Because there are eight factors on which each school was scored and only five schools in the district, there were not enough degrees of freedom to make any statistical tests of inference about significant differences. However, all of the schools scored so close to each other on this instrument that such tests were deemed not necessary. The profiles of each school were compared to the prototypic profiles produced by Halpin and Croft so that a proper labeling could be given to each school regarding its climate.

The technique used on the scores produced by the other two instruments is called Multiple Discriminant Analysis. This technique can be used when there are many scores on one set of subjects and these subjects come from different groups or populations. The question answered by this method is whether or not there is something in the set of scores that could be used to separate the subjects and locate them in their proper group. If this can be done from the given set of scores, it can be said that there are differences in these scores that are related to group membership. If it cannot be done, then the conclusion is reached that there are no identifiable differences among the groups reflected in these scores. Perhaps an example here might help clarify this methodology. Suppose that a researcher had measures on all the past basketball players at the University of Houston. He knows which of these players has made it into the Professional ranks and which of them did not make it. This would constitute

two groups from the same general population, those who are of professional caliber and those who are not. Now going back to his records on these players, he could ask the question: Is there any pattern in these indices or scores (height, weight, free throw percentage, shooting percentage, etc.) that could have predicted whether or not a particular player would belong in the group of those who made it in professional basketball and those who did not. The underlying assumption here is that there are differences in these indices that are related to group membership. The researcher would now submit these indices to the Discriminant Analysis technique, and it would try to identify group membership by using the indices alone. To the extent that the method could correctly assign a player to his proper group, it could be said that there are significant group differences. If the technique failed to locate players in their proper groups, beyond a chance level, it would be said that there were no statistically significant group differences to be found in this set of indices.

The present study parallels this example except for the fact that this study attempts to separate the sample into five groups, not two, thus the name Multiple Discriminant Analysis. The strength of this technique lies in its use of all the scores on the instrument simultaneously. In this way it becomes quite a powerful technique and quite sensitive to any differences that might exist. It could be said that if there are group differences in a set of scores, Discriminant

Analysis will find them. The converse would also be true. If it doesn't find differences, there very probably aren't any. In this way, the data has the maximum possibility of displaying itself in a true light.

The analysis of this data was run on an 1108 model Univac computer using the program developed in the BIOMED package. Breakdowns into different subgroups were also tried in order to arrive at a feasible set of conclusions. In all, nine different runs were made for the student data and nine runs for the teacher data.

RESULTS

ORGANIZATIONAL CLIMATE DESCRIPTION QUESTIONNAIRE

The Organizational Climate Description Questionnaire (OCDQ) indicated that all five schools had quite similar profiles. Using a standardized form of scores on each of the factors, a mean of fifty and a standard deviation of ten, Table I gives an overview of the scores on each of the dimensions by schools. The scores on the first factor, disengagement, ranged from a low of thirty seven to a high of forty five. All of these scores were very close together and all were below the mean. According to the instrument, <u>low</u> scores would indicate that the teachers are concerned and "in gear" with respect to the tasks at hand. Low scores show a high degree of engagement or involvement, normally considered good and healthy. The scores on the second factor, Hindrance, ranged

TABLE I

OCDQ Standardized Factor Scores by Factor and School

factor*	Bane	Post	Holbrook	Lamkin	Matzke
DIS	40	37	42	45	45
HIN	42	37	37	41	41
ESP	54	55	56	49	55
INT	60	64	59	61	59
ALO	36	40	42	41	36
PRO	46	53	42	71	42
THR	56	53	58	43	53
CON	66	61	66	50	65

Mean = 50, S.D. = 10

from thirty seven to forty two. Again, they were very close together, within one half of a standard deviation, and all were below the mean. Low scores on this factor indicate that the teachers feel that the principal does not burden them with unnecessary detail or busywork. The low scores would indicate that the teachers feel that the principal facilitates their work, again a desirable situation. The scores on Esprit ranged from a low of forty nine to a high of fifty six. Four of the five scores were above the mean with one just about on it. All five scores were just about within one half of a deviation. Higher scores on this factor indicate that the teachers feel that their social needs are being satisfied, and that they are, at the same time, enjoying a sense of accomplishment in their job. The fourth factor, Intimacy, refers to the teachers' enjoyment of friendly social relations with each other. The scores in these schools ranged from fifty nine to sixty four, indicating that the teachers in all of the schools felt that they had a strong social relationship with their peers.

The next four factors in this instrument deal with a principal's behavior as perceived by the teachers. The first of these is, Aloofness, which refers to a behavior by a principal that might be characterized as formal and impersonal. Low scores here, or scores below the mean would indicate that they felt that their principal's behavior was not this way and that it was of a more friendly, personal nature. The five

schools in this study were all below the mean and the scores ranged from a low of thirty six to a high of forty two. Even the highest score was about a deviation below the mean, indicating that all of the teachers perceived their principals as not being aloof and unreachable. This is also a very desirable characteristic. Production Emphasis is the second factor in this group and it refers to the behavior by the principal which is characterized by close supervision of the staff. He is highly directive and not very sensitive to feedback from the staff but things do get done. Four of the schools ranged from forty two to fifty three on this factor indicating that production was the result of a give and take situation in their schools. One school, Lamkin, scored at seventy one on this factor, indicating that those teachers perceived the behavior to be characterized by closer supervision. It is not easy to say, on this dimension, which kind of score is most desirable. If the scores are too low, this indicated that everybody has a good time discussing things but that nothing gets done. On the other hand high scores would indicate that one person is in control but it may be that a lot gets accomplished. Thrust, the next factor, refers to the principal trying to move the organization. Thrust behavior is marked by the principal's attempt to motivate the teachers through the example which he sets. This behavior is also task oriented and can bring about a great deal of production. The scores on thrust ranged from forty

three to fifty eight. The low score of forty three was made by the same school that had the high score on Production Emphasis. This would be expected in that the principal that works as a supervisor of production is not usually seen as a producer himself. Both of these types do get a good deal of production from the staff. Again it is difficult to indicate which is the better mode of operation, although those schools with the more open climates tend to score low on Production Emphasis and High on Thrust. The last factor is called Consideration. High scores on this factor would indicate that the teachers would view their principal as treating them a little more humanly than might be expected from the formal relationship. These scores ranged from fifty to sixty six. All were above or on the mean and this would indicate that the teachers felt that they were, in fact, being treated quite humanly.

Any differences shown in the table may tend to get overemphasized due to the great similarity of the five schools. When, however, these scores are combined into individual school profiles, all five schools fell into the open-autonomous end of the scale. Halpin and Croft have indicated that these two positions are the healthiest of the climates in that they promote the best working situations and best production. (See Appendix A for narrative descriptions of each of the climates). The great deal of similarity found in these five school climates and the fact that they are all at the "good" end of the scale are string indicators of a well organized

and well run school district. Their lack of divergence does not, however, help the work of the researcher. It became almost impossible to relate differences in climate to differences in the other dimensions simply because of the lack of differences in these climates. Table II indicates, by school, the prototypic climate each school best fits.

TABLE II

Best Fitting Climate for Each School

School	Climate
Bane	Open
Post	Autonomous
Holbrook	Open
Lamkin	Autonomous
Matzke	Open

See Appendix A for descriptions of these climates.

CHILDREN'S PERSONALITY QUESTIONNAIRE

The findings of this instrument indicated that there was a great deal of similarity in the personality scales across the five schools. There were enough differences, though, to allow the rejection of the null hypothesis (that no significant differences would be found). A statistic called a Generalized Mahalanobis D-square was used in conjunction with the Multiple Discriminant Analysis to test this

null hypothesis. It was rejected at the .001 level of significance, indicating that there were significant differences between the schools as measured by the CPQ.

In attempting to locate or place the children in their proper groups using only the CPQ data, the method was able to correctly match forty-six percent of the children with their correct school. A chance matching would be expected to produce only twenty percent correct when five groups are to be considered. Although the forty-six percent figure may not seem particularly high, it is well above chance. The group that had the highest degree of correct placements and therefore might be considered the most homogenous of all was the Matzke School group. Sixty three percent of this group were correctly located in the Matzke school. The least homogenous of the groups was the Holbrook school where only twenty three percent of the children could be correctly located. The Bane school had a high degree of correct placements, fifty three percent, with fifty percent of the Lamkin children being correctly placed, and forty-four percent of the Post children correctly located. It must be remembered that the purpose of this test was not to see if the technique could correctly locate the subjects, but to find out if there were enough differences in the CPQ scores, attributable to school membership, to make placement beyond that which could be expected by chance possible. The differences found were great enough to allow this and therefore the conclusion could be reached that there

are differences in personality traits of children that are related to their school membership.

Table III shows the percentages of placement for each group with the correct placement underlined and the value for D^2 which is tested as Chi-square with fifty six degrees of freedom. The magnitude of this value indicated that there were significant differences between groups when all the means were tested at simultaneously.

TABLE III

Placement Percentages as Located by Multiple Discriminant Analysis on CPQ

True Group	Located by Analysis				
	Bane	Post	Holbrook	Lamkin	Matzke
Bane	53%	17	13	10	7
Post	17	44	13	13	13
Holbrook	20	30	23	10	17
Lamkin	7	10	23	50	10
Matzke	10	10	7	10	63

$D^2 = 83.36208$ as Chi-square with 56 df; $p < .001$

Further analyses were done to see if likenesses and differences among sub-groups of schools could be found. The same discriminant analysis technique was used but this time schools were grouped in different combinations. The purpose here was to try to determine which schools looked most like

each other in terms of the personality characteristics of their children. The results of this work indicated that there probably were two distinct groups with one school that tended to fluctuate between the two. One group contained the Bane and Post schools while the other contained the Matzke and Lamkin schools. The school that was not clearly identified with either group was the Holbrook school although it fit better with the Post-Bane group than it did with the other.

The meaning of the overall differences are not easily found. Table IV lists, by school, the mean scores of the children on each factor of the test. These scores have been converted to STEN scores. This is a transformation that changes raw scores to normalized standard scores with a mean of 5.5 and a standard deviation of 2. This would mean that fifty percent of the scores in the norm group would fall between a STEN score of 5 and a STEN score of 6. As can be seen from the table most of the mean scores found in this study were within the normal expected range. This would indicate a well adjusted sample of children and in turn a well adjusted school system.

Looking at only those factors where one school scored at least one half of a deviation above or below the test, we can get some indication as to the kinds of differences that were found. On factor B, an intelligence factor, the Bane school scored higher than the others indicating that those

TABLE IV

Mean Scores on Each CPQ Factor by School

Factor	Bane	Post	Holbrook	Lamkin	Matzke
A	5	6	6	6	5
B	6	5	5	5	5
C	5	5	5	5	5
D	6	6	6	6	6
E	5	5	5	5	6
F	6	6	5	5	7
G	5	5	5	6	4
H	5	6	6	6	6
I	5	5	5	6	5
J	6	6	6	6	6
N	6	6	6	5	7
O	5	5	5	5	6
Q_3	6	6	6	6	5
Q_4	5	5	5	5	6

Mean = 5.5; S.D. = 2

children were found to be slightly more intelligent or have a higher scholastic mental capacity. On Factor E, the Matzke school scored higher than the rest. A higher score on this factor indicates that the children are more assertive and independent. The Matzke school also scored higher on factor F. A higher score on this factor characterizes them as being enthusiastic, optimistic and self-confident. The lower score of the Matzke school on factor G indicates that they have not incorporated the values of the adult world, especially those

values that relate to achievement in the school setting. The Lamkin children had a higher score on factor I. A higher score on this factor would indicate tender-mindedness and sensitivity. It may indicate a higher degree of dependency. Factor N indicated that the higher scores of the Matzke children would give them such labels as Shrewd, Calculating, Astute. The Matzke children had the highest scores on factor O and factor Q_4 also. Factor O would indicate that they were more apprehensive than the others and factor Q_4 would indicate that they were more tense than the rest of the sample. Their low score on factor Q_3 indicates that they are casual and careless of social rules.

As the reader interprets these scores he would be cautioned again that all of the scores were in the accepted "normal" ranges and that we are looking at subtle differences here. Differences that are significant but not so great as to require immediate action. More complete descriptions of these factors can be found in Appendix A of this report.

EDWARDS PERSONAL PREFERENCE SCHEDULE (EPPS)

Statistically significant differences were found among the teachers groups as measured by the EPPS. This instrument gives results on fifteen different scales, each representing a need of the subject. These needs are related to personality adjustment. This instrument, like the CPQ does not allow for the combining of scores and therefore the same technique was

used (multiple discriminant analysis) in order that the fifteen sets of scores from all five groups could be analyzed simultaneously. The overall Analysis produced a D^2 value of 105.7, which when tested, proved to be significant beyond the .001 level of significance. This is best interpreted by the acceptance of the hypothesis that there are significant differences in the five sets of fifteen mean scores and that these differences are related to group membership. Having found these differences the technique was used to attempt to correctly locate the teachers in their proper schools. Fifty-two percent of the teachers were correctly placed. The chance expectation would again be twenty percent. As can be seen, this was well above chance and is further proof that there were differences related to group membership. The Bane and Holbrook groups proved to be the easiest to place and therefore might be thought of as the most homogenous groups. In each of these, sixty-two percent were properly placed. Fifty-five percent of the Matzke teachers were correctly identified and fifty percent of the Post teachers were properly placed. The group that was the least locatable and therefore probably the most heterogenous was the Lamkin teacher group. Only thirty-three percent of them could be identified. Table V indicates the percentages of placement and the D^2 value found, with the correct placements underlined. Further analyses were also done on this data in order to try to locate sub-groups among the schools. The Post and Bane teachers were significantly

TABLE V

Placement Percentages as Located by Multiple Discriminant Analysis on EPPS

True Group	Located by Analysis				
	Bane	Post	Holbrook	Lamkin	Matzke
Bane	62%	11	17	5	5
Post	11	50	5	11	22
Holbrook	17	5	62	17	0
Lamkin	11	11	17	33	28
Matzke	5	17	17	5	55

D^2 = 105.77489 as Chi-Square with 64 df; $p < .001$

different from each other. The Holbrook, Lamkin and Matzke teachers appeared to be more similar to each other, but the similarities were not of great strength and it might be possible to consider each as a distinct group. The next question to be answered by this data concerned the location of the differences and meanings that might be attached to these differences. Table VI presents the data as means, by schools, on each of the fifteen dimensions. A standard score form was used with the distribution having a mean of 50 and a standard deviation of 10.

By looking only at those scores that are about one half of a standard deviation from the other groups (4 or 5 points) some pattern as to the location of the differences seems to emerge. In the second factor, Deference (def) the

TABLE VI

Mean Scores on Each EPPS Factor by School

	Bane	Post	Holbrook	Lamkin	Matzke
ach	57	52	55	52	49
def	55	60	54	51	48
ord	60	61	58	55	57
exh	50	45	44	48	46
aut	48	43	48	52	51
aff	50	51	48	43	47
int	42	48	52	47	46
suc	51	50	50	46	53
dom	43	42	49	49	49
aba	45	49	47	47	48
nur	49	47	53	44	49
chg	47	53	47	52	53
end	51	57	54	54	51
het	53	45	42	52	49
agg	51	49	49	54	52

Mean = 50; S.D. = 10

Post school group scored quite a bit higher than the other groups. This would be interpreted as the Poast teachers having a greater need to get suggestions from others, to follow instructions and to do what is expected. On the Autonomy (aut) factor, the Bane school is lower than the others and this would indicate that they have a lower need to be able to come and go as desired and to say what one thinks about things. The Lamkin school group showed a lower need to be loyal to friends and to participate in friendly groups. This

comes from their lower score on the Affiliation factor. The Bane school scored lower on the Intraception (int) factor. That is, they showed less need to analyze one's motives and feelings, to observe others and to understand how others feel about problems. On the Succorance factor (suc), the Lamkin school was low indicating that they felt a lesser need to have others provide help when in trouble and a lesser need to seek encouragement from others than did the other groups. On the Dominance (dom) factor two groups, Bane and Post were lower than the other three. Low scores here indicate that they have a lesser need to argue for one's point of view or to be leaders. The Bane and Holbrook teachers showed a lower need for Change (chg), the need to do new and different things, than did the other teachers. Two groups, Post and Holbrook also had lower scores on the Heterosexuality (het) but this factor would not have a bearing on this study.

All the groups showed a great degree of well-being and were well within the "normal" ranges of this instrument. There did seem to be a pattern here that placed the three open space schools in one group and their needs seem to be related to the way teachers must function in that kind of a building.

SUMMARY AND CONCLUSION

This study was an extension of research done in 1970 relating the Matzke school Open Concept to personality characteristics of the children in that environment. The present

study attempted to describe the climate of each school in the Cypress Fairbanks district, the needs of the teachers in each school and the personalities of the children in each school. Two related questions were asked of the data: What were the relative positions of each of these schools and were there significant differences among these schools on any of the descriptive dimensions? The overall purpose was to relate that which is being done at Matzke to those things that are being done in the other schools of the district.

Representative samples of children were chosen from the third, fourth and fifth grades of each of four schools in the district. The data collected at the Matzke school the previous year was used in order that those students would not have taken the same instruments twice. Data on the climate of the schools and on the needs of the teachers was collected using all of the teachers in the district.

Three instruments were used for the data collection. The Organizational Climate Description Questionnaire (OCDQ) was used to measure the climate of the five schools in the study. The Edwards Personal Preference Schedule (EPPS) was used to assess the needs of the teachers in the district, and the Children's Personality Questionnaire (CPQ) was used to measure characteristics of the personalities of the children. These three instruments were chosen because they represented the best standardized instruments available for meeting the needs of this study.

A statistical technique called Multiple Discriminant Analysis was used on the EPPS and the CPQ data. This technique looks at all of the scores on all the scales of an instrument simultaneously and asks the question: Is it possible to identify the group to which a person belongs, by his scores on the given instrument? If, in fact, this technique can discriminate among people and correctly locate them in their school it could be said that there are significant differences among these schools as measured by these instruments. Failure to correctly locate people in their proper schools would indicate that there are no differences among the schools.

The OCDQ instrument was scored so that each school climate was described as being located on a six point continuum from the "closed climate" to the "open climate." This instrument reflects the school's "personality" as perceived by the teachers in that school.

The results of the study indicate that there are statistically significant differences among the schools on two of the three instruments. The OCDQ indicated that three of the schools could best be classified as "open" and that two of them would best be classified as "Autonomous." Both of these classifications produce similar profiles and both are considered to be quite productive while satisfying the needs of the staff. These were not considered significantly different.

The CPQ also indicated a great degree of similarity among the school populations. Multiple discriminant analysis

did, however, reveal that there are significant differences in the overall profiles of the children that could be attributed to school membership. In general, when compared to the norms of the instrument, the whole district produced quite strong and quite normal profiles. Details as to the possible locations of the differences are given in the body of the paper, but in general it would seem that the profiles of the children in Lamkin and Matzke schools were very similar and that the profiles of the children in Bane and Post schools also showed a great deal of similarity to each other. The children in the Holbrook school showed the fewest identifiable characteristics in that they seemed to fluctuate between the Bane-Post group and the Lamkin-Matzke group. Overall, given the individual scores on the fourteen scales of the CPQ, the statistical technique correctly placed forty six percent of them in their proper schools. The best success was had with the Matzke children, sixty-three percent were placed correctly in the Matzke school, and the Bane school, where fifty three percent were correctly placed. The least success was had with the Holbrook school where only twenty three percent were placed correctly. Twenty percent would be what could be expected for correct placement by chance alone. In general this means that the children in the Bane and Matzke schools had personality characteristics most similar to other members of their respective groups and that these characteristics might reasonably be related to their school settings. These findings give some

support to the hypothesis that school environments do influence the personalities of the children within them.

The EPPS instrument also gave results that indicated that there were significant differences in the overall profiles of the teachers in the five schools and that they could be placed in their respective schools. Given the individual scores on the fifteen variables of the EPPS, the statistical technique was able to correctly place fifty two percent of the teachers in their proper schools. Two groups, Bane and Holbrook were the easiest to locate, each with sixty one percent being correctly located. Lamkin teachers were the most difficult to identify with only thirty three percent correctly identified. The results did indicate that there were differences among the groups which allowed the technique to discriminate between the groups at well beyond a chance level or expectation.

Overall, when compared with the norms of the EPPS instrument, all of the groups exhibited good, healthy, and well adjusted personalities. The differences found although statistically significant, were psychologically small and well within the boundaries of the normal, well adjusted personality. The statistical significance is of research interest in that it indicates here, as it did with the children, that there is some relationship between group membership and individual personality. This in turn supports the idea that the working environment does influence the personalities of the teachers.

Just how the profiles differed and who had the better profile are not easily answerable questions. Material in the body of this report will indicate the possible areas of difference but it must be remembered that the overall profiles were what was found to be different and that differences on any one scale may not be significant in itself. The second question of which profile is best, is closely related to the objectives, goals, and philosophy of the school district. Those who set policy should look at these results as information to be used in policy making decisions and not as final proof of the success or failure of their programs.

Two major conclusions might be drawn from this research: One, that the environment of the school, physical, mental, emotional and social, is related to the personality development of the student and, two, Open Concept environments are not totally a function of schools without walls. That is to say that an open free environment can be developed in any school building, but it appears from this study that this open concept is facilitated by open space schools. This may be because open space seems to support more teacher interaction which in turn may bring about innovative teaching more rapidly.

An overall look at this data seems to support the hypothesis that there is a relationship between the type of building, administration, and curriculum used and the personality development of the child. But a crucial point seems to

be that the linkage between these facets of the district and the child is through the teachers. That is to say the things such as building design, administrative style, curriculum mode, etc. more directly affect teacher behavior and performance and that this behavior in turn affects the students. This is not a new thought by any means but it does restate a position that some forces in education today have been trying to override.

Can "Open Concept Schools" make a difference? This researcher thinks the answer is yes but only to the extent that teachers use these ideas to modify their behaviors, because it is their behavior that has the most direct effect on the children. All the rest is important only in that it can facilitate or frustrate the teacher who is attempting to develop an openness that is the key to good teaching.

This school district has proven that good teaching, that which brings about good healthy personality development in children, can take place in a variety of building designs. This district seems to be committed to a philosophical stance which places the growth and welfare of the student first and that this philosophy pervaded all the schools and brought about a welcome degree of high level performance.

APPENDIX A

The Autonomous Climate*

The distinguishing feature of this Organizational Climate is the almost complete freedom that the principal gives to teachers to provide their own structures-for-interaction so that they can find ways within the group for satisfying their social needs. As one might surmise, the scores lean slightly more toward social-needs satisfaction than toward task-achievement (relatively high scores on Esprit and Intimacy).

When the teachers are together in a task-oriented situation they are engaged in their work; they achieve their goals easily and quickly (low Disengagement). There are few minority pressure groups, but whatever stratification does exist among the group members does not prevent the group as a whole from working well together. The essential point is that the teachers do work well together and accomplish the tasks of the organization.

The teachers are not hindered by administrative paper work, and they do not gripe about the reports that they are required to submit. The principal has set up procedures and regulations to facilitate the teachers' task. A teacher does not have to run to the principal every time he needs supplies, books, projectors, and so on; adequate controls have been established to relieve the principal as well as the teachers of these details (low Hindrance). The morale of the teachers is high, but not as high as in the Open Climate. The high morale probably stems largely from the social-needs satisfaction which the teachers receive. (Esprit would probably be higher if greater task-accomplishment also occurred within the organization).

The principal remains aloof from the teachers, for he runs the organization in a businesslike and a rather impersonal manner (high Aloofness). His leadership style favors the establishment of procedures and regulations which provide guidelines that the teachers can follow: he does not personally check to see that things are getting done. He does not force people to produce, nor does he say that "we should be working harder." Instead, he appears satisfied to let the teachers work at their own speed; he monitors their activities very little (low Production Emphasis). On the whole, he is considerate, and he attempts to satisfy the social needs of the teachers as well as most principals do (average Consideration).

The principal provides Thrust for the organization by setting an example and by working hard himself. He has the personal flexibility both to maintain control and to look out for the personal welfare of the teachers. He is genuine and flexible, but his range of administrative behavior, as compared to that of the principal in the Open Climate, is somewhat restricted.

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*From a report by Dr. A. Johnson to the Dallas Independent School District.

The Open Climate

The Open Climate depicts a situation in which the members enjoy extremely high Esprit. The teachers work well together without bickering and griping (low Disengagement). They are not burdened by mountains of busywork or by routine reports; the principal's policies facilitate the teachers' accomplishment of their tasks (low Hindrance). On the whole, the group members enjoy friendly relations with each other, but they apparently feel no need for an extremely high degree of Intimacy. The teachers obtain considerable job satisfaction and are sufficiently motivated to overcome difficulties and frustrations. They possess the incentive to work things out and to keep the organization "moving." Furthermore, the teachers are proud to be associated with their school.

The behavior of the principal represents an appropriate integration between his own personality and the role he is required to play as principal. In this respect his behavior can be viewed as genuine. Not only does he set an example by working hard himself (high Thrust) but, depending upon the situation, he can either criticize the actions of teachers or go out of his way to help a teacher (high Consideration). He possesses the personal flexibility to be genuine whether he be required to control and direct the activities of others or to show compassion in satisfying the social needs of individual teachers. He has integrity in that he is "all of a piece" and therefore can function well in either situation. He is not aloof, nor are the rules and procedures which he sets up inflexible and impersonal. Nonetheless, the rules and regulations that he adheres to provide him with subtle direction and control for the teachers. He does not have to emphasize production; nor does he need to monitor the teachers' activities closely, because the teachers do, indeed, produce easily and freely. He does not do all the work himself because he has the ability to let appropriate leadership acts emerge from the teachers (low Production Emphasis). Withal, he is in full control of the situation, and he clearly provides leadership for the staff.

CPQ SCALES AND MEANINGS

Low Score Description		High Score Description
FACTOR A		
Reserved, Detached, Critical, Cool	vs.	Warmhearted, Outgoing, Participating, Easygoing

The high scorer is generally characterized as warm and sociable, the low scorer, as more cool and aloof. At the childhood level, the difference between the high and low scorers is particularly evident in the extent to which the child responds favorably to teachers and to the school situation generally.

FACTOR B		
Less Intelligent, Concrete-thinking, Lower Scholastic Mental Capacity	vs.	More Intelligent, Abstract-thinking, Bright, Higher Scholastic Mental Capacity

The child who scores high on Factor B tends to be "bright" and abstract-thinking, while a low-scoring child is more concrete-thinking. This intelligence factor is simply a rapid screening measure which allows the classroom teacher to assess general ability especially as the child is functioning. It is not intended to replace the more valid estimate of IQ obtained from longer measures such as the Culture Fair Intelligence Test.

FACTOR C		
Affected by Feelings, Emotionally Less Stable, Easily Upset, Changeable, Lower Ego Strength	vs.	Emotionally Stable, Faces Reality, Calm, Higher Ego Strength

The high scorer appears relatively calm, stable, and socially mature for his age, and is better prepared to cope effectively with others than is the low scorer, who is relatively lacking in frustration tolerance and more subject to a loss of emotional control.

Low Score Description		High Score Description
	FACTOR D	
Phlegmatic, Deliberate, Inactive, Stodgy	vs.	Excitable, Impatient, Demanding, Overactive

This scale seems to have a tendency to exhibit distress on slight provocation or to overreact to various kinds of stimuli. The low scorer might be described as emotionally placid.

	FACTOR E	
Obedient, Mild, Conforming, Submissive	vs.	Assertive, Independent, Aggressive, Stubborn Dominant

The high-scoring child is relatively active, assertive, and aggressive, while the low scorer is more docile. At the childhood level, aggressive behavior is a more likely expression of this factor than is successful dominance, since most of the techniques of social manipulation are yet to be learned. A high E score is frequently accompanied by behavior problems at this age level, but if the underlying assertiveness is handled in a way conducive to the development of more constructive expression, the later adjustment of the child may be quite successful.

	FACTOR F	
Sober, Prudent, Serious, Taciturn	vs.	Happy-go-lucky, Impulsively Lively, Gay, Enthusiastic, Heedless

The high scorer is rather enthusiastic, optimistic, and self-confident. The low scorer is serious and self-deprecating. Research evidence indicates that the high F child is likely to come from a relatively secure and affectionate family milieu, while the low-scoring child's home life is likely to be characterized by deprivation of affection.

Low Score Description		High Score Description
FACTOR G		
Expedient, Disregards Rules, Undependable, By-passes Obligations, Weaker Superego Strength	vs.	Conscientious, Persevering, Staid, Rule-bound, Stronger Superego Strength

This scale apparently reflects the extent to which the child has incorporated the values of the adult world. Of special importance at the childhood level are the values relating to achievement in the school setting.

FACTOR H		
Shy, Restrained, Diffident, Timid	vs.	Venturesome, Socially Bold, Uninhibited, Spontaneous

Like Factor A, Factor H constitutes a component of extraversion-introversion and is expressed in varying degrees of sociability. While the high A individual is sociable in the sense that he shows a positive emotional response to people, the high H individual is sociable in the sense that he interacts freely and boldly with people. The low H child is more sensitive and more easily intimidated and seeks to avoid social threat and overstimulation through withdrawal.

FACTOR I		
Tough-minded, Self-reliant, Realistic, "No-nonsense"	vs.	Tender-minded, Dependent, Overprotected, Sensitive

Research evidence points to the personality pattern associated with the high end of this factor as a kind of sensitivity fostered by overprotection. Accordingly, the high-scoring child is one who tends to show greater dependence, fearful avoidance of physical threat, and more sympathy for the needs of others than the low scorer, who is more independent, robust, and practical.

Low Score Description		High Score Description
	FACTOR J	
Vigorous, Goes Readily with Group, Zestful, Given to Willing Action	vs.	Circumspect, Obstructive, Individualistic, Unwilling to Act with Group

The high scorer tends to be individualistic, guarded, critical of others, and circumspect, while the low scorer is more freely expressive, active, and uncritical.

	FACTOR N	
Forthright, Natural, Artless, Sentimental	vs.	Shrewd, Calculating, Astute

In older groups, the high N individual has been described as socially perceptive and skillful, "sharp," and rather opportunistic, while the low N individual is described as more naive, sentimental, and youthfully awkward. The specific expression of this factor in childhood seems less clearly defined. The high scorer, however, does seem more "wise" to the ways of adults and peers and, therefore, better able to advance his own interests than the low scorer.

	FACTOR O	
Self-assured, Placid, Secure, Serene, Untroubled Adequacy	vs.	Apprehensive, Worrying, Depressive, Troubled, Insecure

This is the factor most directly concerned with prevasive subjective distress, and it has been found in older groups to be the factor which best differentiates neurotics from the general population. The distress reaction of the high scorer might be variously characterized as irritability, anxiety, or depression, depending on the situation.

Low Score Description		High Score Description
	FACTOR Q_3	
Casual, Careless of Social Rules, Untidy, Follows own Urges, Low Integration	vs.	Controlled, Socially-precise, Self-disciplined, Compulsive, High Self-concept Control

With older groups, this factor tends to reveal those who have strong control of their emotions and general behavior, and who are especially socially aware and careful. The low Q_3 indicates one who is not bothered by will control nor the regard for social demands. A child with a low Q_3 score might, for example, be more frequently in trouble with school regulations, not with delinquent intent, but through carelessness and neglect.

	FACTOR Q_4	
Relaxed, Tranquil, Torpid, Unfrustrated	vs.	Tense, Driven, Overwrought, Fretful

In older groups, Factor Q_4 seems to relate to a variety of symptomatic behaviors that might generally be explained in terms of "nervous tension" or undischarged drive. The high Q_4 child feels frustrated and may give way to displays of temper and irritability. The low, relaxed end of the scale seems to reflect a kind of composure that makes for easy sociability.

THE MANIFEST NEEDS ASSOCIATED WITH EACH OF THE 15 EPPS VARIABLES

1. ach Achievement: To do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.

2. def Deference: To get suggestions from others, to find out what others think, to follow instructions and do what is expected, to praise others, to tell others that they have done a good job, to accept the leadership of others, to read about great men, to conform to custom and avoid the unconventional, to let others make decisions.

3. ord Order: To have written work neat and organized, to make plans before starting on a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip, to organize details of work, to keep letters and files according to some system, to have meals organized and a definite time for eating, to have things arranged so that they run smoothly without change.

4. exh Exhibition: To say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance, to say things just to see what effect it will have on others, to talk about personal achievements, to be the center of attention, to use words that others do not know the meaning of, to ask questions others cannot answer.

5. aut Autonomy: To be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants, to do things that are unconventional, to avoid situations where one is expected to conform, to do things without regard to what others may think, to criticize those in positions of authority, to avoid responsibilities and obligations.

6. aff Affiliation: To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships, to make as many friends as possible, to share things with friends, to do things with friends rather than alone, to form strong attachments, to write letters to friends.

7. int Intraception: To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place, to judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act.

8. suc Succorance: To have others provide help when in trouble, to seek encouragement from others, to have others be kindly, to have others be sympathetic and understanding about personal problems, to receive a great deal of affection from others, to have others do favors cheerfully, to be helped by others when depressed, to have others feel sorry when one is sick, to have a fuss made over one when hurt.

9. dom Dominance: To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader, to be elected or appointed chairman of committees, to make group decisions, to settle arguments and disputes between others, to persuade and influence others to do what one wants, to supervise and direct the actions of others, to tell others how to do their jobs.

10. aba Abasement: To feel guilty when one does something wrong, to accept blame when things do not go right, to feel that personal pain and misery suffered does more good than harm, to feel the need for punishment for wrong doing, to feel better when giving in and avoiding a fight than when having one's own way, to feel the need for confession of errors, to feel depressed by inability to handle situations, to feel timid in the presence of superiors, to feel inferior to others in most respects.

11. nur Nurturance: To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others, to do small favors for others, to be generous with others, to sympathize with others who are hurt or sick, to show a great deal of affection toward others, to have others confide in one about personal problems.

12. chg Change: To do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions.

13. end Endurance: To keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved, to work at a single job before taking on others, to stay up late working in order to get a job done, to put in long hours of work without distriction, to stick at a problem even though it may seem as if no progress is being made, to avoid being interrupted while at work.

14. het Heterosexuality: To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex, to kiss those of the opposite sex, to be regarded as physically attractive by those of the opposite sex, to participate in discussions about sex, to read books and plays involving sex, to listen to or to tell jokes involving sex, to become sexually excited.

15. agg Aggression: To attack contrary points of view, to tell others what one thinks about them, to criticize others publicly, to make fun of others, to tell others off when disagreeing with them, to get revenge for insults, to become angry, to blame others when things go wrong, to read newspaper accounts of violence.